

[0001] KNOCK-DOWN 2 SWING DOOR STORAGE CUPBOARD

[0002] FIELD OF INVENTION

[0003] The present invention relates to a storage cupboard having two doors that is provided in the ready-to-assemble (RTA) condition.

[0004] SUMMARY

[0005] The present invention provides a knock-down 2 swing door storage cupboard that is ready-to-assemble in accordance with the method of the present invention. The cupboard has two front doors that can be opened and shut by using hinge pins instead of a hinge. The cupboard is made of steel that is rigid, durable, and light-weight. The components of the cupboard are packed in a flat carton in order to save the cost of packing and transportation.

[0006] In the first embodiment, the width and depth of the cupboard are 36" x 18" and the cupboard is available in three heights, 42", 72" and 78". In a second embodiment, the cupboard has a 30" width, 66" height, and 15" depth.

[0007] BRIEF DESCRIPTION OF THE DRAWING(S)

[0008] Throughout the drawings, the first embodiment and the second embodiment of the invention are identified using the reference letters "A" and "B", respectively. For example, all figures labeled with the suffix "A", *e.g.*, Figure 4A, illustrate the first embodiment of the invention, and all figures labeled with the suffix "B", *e.g.*, Figure 4B, illustrate the second embodiment of the invention.

[0009] Figure 1 is a perspective view of each embodiment of the Knock-Down 2 Swing Door Storage Cupboard;

[0010] Figure 2 is an exploded view of the first embodiment of the invention;

[0011] Figure 3 is an exploded view of the second embodiment of the invention;

[0012] Figure 4A shows how to assemble left & right back panels of the first embodiment of the invention;

[0013] Figure 4B shows how to assemble the left & right side panels with the bottom panel of the second embodiment of the invention;

[0014] Figure 5A shows how to assemble the back panel with the side panel of the first embodiment of the invention;

[0015] Figure 5B shows how to assemble the back panel with the left & right side panels of the second embodiment of the invention;

[0016] Figure 6A shows how to assemble the bottom rail with the left & right side panels of the first embodiment of the invention;

[0017] Figure 6B shows how to assemble the back panel with the left & right side panels and bottom panel of the second embodiment of the invention;

[0018] Figure 7A shows how to assemble the bottom panel with the left & right back panels and left & right side panels of the first embodiment of the invention;

[0019] Figure 7B shows how to assemble the top panel with the body by using an L bar of the second embodiment of the invention;

[0020] Figure 8A shows how to assemble the outer bottom rail with the inner bottom rail of the first embodiment of the invention;

[0021] Figure 8B shows how to assemble the top panel with the body of the second embodiment of the invention;

[0022] Figure 9 A shows how to assemble the top panel with the body of the first embodiment of the invention;

[0023] Figure 9B shows how to assemble the top rail and the bottom rail with the body of the second embodiment of the invention;

[0024] Figure 10A shows how to assemble the door magnetic catch and the shelf clips of the first embodiment of the invention;

[0025] Figure 10B shows how to assemble the shelf clips and the shelf of the second embodiment of the invention;

[0026] Figure 11A shows how to assemble the door and the rod of the first embodiment of the invention; and,

[0027] Figure 11B shows how to assemble the magnetic catch, handle, and rod of the door of the second embodiment of the invention.

[0028] DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT(S)

[0029] The apparatus and method of the present invention are described with reference to figures 1-11 wherein like reference numerals are used throughout to designate like elements.

[0030] A first embodiment of the cupboard is shown in a disassembled condition in figure 2 and is designated generally by reference numeral 30. The cupboard comprises the following components: top panel 1; bottom panel 2; left 3 and right 4 back panels; shelves 5; left panel 6; right panel 7; left door 8; right door 9; outer kickplate 10; inner kickplate 11; hinge pin 12; plastic door guide 13, plastic part 14; shelf clip 15; screws 16; lock components 17-19; screws 20; magnetic catch 21; slots 22, 24; and, connectors 23, 25.

[0031] Left and right back panels. Make it in 2 parts in order to save the space for packaging & transportation and easy to assemble as the size of the panels are not too large and each panels will be able to hold and properly locked (figure 4A). There is flange (figure 4A) for the bottom panel to have the position to hold in order to absorb the upper weight of bottom panel.

[0032] Left and right side panels. Each corner of the panels will have the following parts. Top corner front is the part to hold the screw and top panel (figure 5A). Top corner back is the part to strengthen the case (figure 5A). Bottom corner front is the part to hold with inner kickplate (figure 5A). Bottom corner back is the part to be the cupboard base (figure 5A).

[0033]     Inner kickplate. There are 2 pre-punched holes on each side in order to force the inner kickplate to be in the right position for holding with both side panels with screws 2 holes each side that it will be easier for assembling. The user can put in the screw easily without pointing into the hole (figure 6A).

[0034]     Bottom Panel. When assembling with the case, it will be firmly held by both side & back flange that has to put on both sides slot of side panel and back both left and right (figure 7A). Then the front flange must be put on the 3 slot of inner bottom rail to strengthen the case.

[0035]     Outer kickplate. Used for attaching the inner kickplate for nice look and holding by inserting the plastic door guide by going through the hold of outer bottom rail all the way to the hold of inner bottom rail (figure 8A).

[0036]     Top panel. There will be flange and slot to hold the left & right back panel and left & right side panels by having 4 taps at the back and use 2 screws to hold the front in order to fix the top panel with the case (figure 9A).

[0037]     Shelf. After putting on the shelf clips, the edging will be proper fit with the shelf clip that it will be strong to take the weight. (figure 10A)

[0038]     Left door. After assembling the case, there is a unique at the edging that connect with the right door as the flange to go together with the right door to prevent from opening. There are also the positions to plug in the rubber absorber to prevent the noise of the door hitting the case when closing (figure 11A).

[0039]     Right door. Swan handle design in which the user can open the door easily that there will be edging all the way (figure 11A). The keylock and door rod can be locked both top and bottom by using key turning lock and unlock (figure 11A).

[0040]     This Swing-door Storage Cupboard combined of major parts; top panel, bottom panel, left & right panels, left & right doors including shelf and inner & outer bottom rails in which will hold each parts mainly by using flange and connector and put into the precut slots. Then fix with only 6 screws at the important points that there are less parts and easy to assemble. Besides, there is the magnetic catch to hold

the door with the case to prevent from opening and easy to lock as it is in the proper position. The door pin can be used as the turning point to open and shut the door easily without hinge. The shelf clip is designed to hold heavy weight.

[0041] The method of assembling the cupboard 30 is described with reference to figures 4-11.

[0042] Referring to figure 4, assemble the left 3 and right 4 back panels by aligning the tabs into slotted holes. Then, assemble the right 6 and left 7 side panels in the same manner as illustrated in figure 5.

[0043] Referring to figure 6, assemble the left and right side panels by using the inner kickplate 11 using four screws 16.

[0044] Referring to figure 7, install the bottom panel 2 by fitting the panel into the flange of the inner kickplate and, as seen in figure 8, place the outer kickplate 10 into the front and put on the plastic parts 13 and 14.

[0045] Referring to figure 9, place top panel 1 with screws 20 into both the left and right back panel, and left and right side panels, using the flange and slot.

[0046] Referring to figure 10, install the shelf clips 15 and magnetic catch 21 and put the shelves on the clips.

[0047] Referring to figure 11, assemble the doors by the putting the hinge pin 12 into the plastic door guide 13.

[0048] A second embodiment of the cupboard is shown in a disassembled condition in figure 3 and is designated generally by reference numeral 30'. The cupboard 30' includes the following components: top panel 1'; bottom panel 2'; back panel 3'; shelves 4'; left side panel 5'; right side panel 6'; left front door 7'; right front door 8'; shelf clips 9'; door hinge pin 10'; handle 11'; top rail 12'; bottom rail 13'; keylock set 14', 15'; bracket 16'; screws 17', 18', 19'; fastener 20'; and, hinge component 21'.

[0049] The cupboard includes several major parts such as top panel, bottom panel, left & right side panel, back panel, left & right door, shelf, kickplates. The uniqueness of this cupboard is described below.

[0050] Back panel by unfolding according to the require width (figure 5B) and connect the side and back panels as the C shape and strengthen with screw (figure 5B).

Using L bar to strengthen at the corner of the case. (figure 7B). Using top and bottom rail to reinforce as the left and right door supporter (figure 9B). Using bolt to fix the shelf with the case that can not remove by hand (figure 10B). Assembling the case by holding the door with top fixed pin and bottom free pin (figure 11B).

[0051] The procedure to assemble the RTA cupboard by fixing with bolt and screw except the door and case with hinge pin only (figure 10B).

[0052] Door locking position, in order not to be opened at the connecting position between tab keylock and edge of shelf that have to be installed at the only specified position (figure 11B).

[0053] Combined of top panel, bottom panel, left & right side panel, back panel, left & right door, top and bottom rails assembled mainly with bolts or screws. There is L bar for fixing top corner of the cupboard to strengthen the case. The shelves are fixed with bolts and the doors are assembled with fixed top door pin and freely bottom door pin for easy assembly.

[0054] The method of assembling the cupboard 30' in accordance with an embodiment of the invention is described with reference to figures 4-11.

[0055] Assemble the left 5' and right 6' side panels with the bottom panel 2 using four screws as shown in figure 4

[0056] Referring to figure 5, slide the back panel 3' onto both side panels and fix the back panel thereto with four screws 18'. Then, secure the back with another four screws 19' as shown in figure 6.

[0057] Referring to figure 7, assemble the top panel 1' with brackets 16' on both the left and the right side. Place the top panel into the flange of the side and back panels.

[0058] Referring to figure 9, assemble the top rail 12', and the bottom rail 13' together with screws 19', three screws each from the inside. Then, install the shelves

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as seen in figure 10' and fix with two screws 17' in front and one at the back of each shelf.

[0059] Referring to figure 11, insert the plastic part 21' and 47' into the holes of the top and bottom rail on the left and right side. Assemble the keylock set 14', 15' and handle 11' including the door hinge pin 10' with the door 7' and 8'.

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